Bermond, Jean-Claude; **Coudert, David**; **Yu, Min-Li**
On DRC-covering of K_n by cycles. (English) ☐ Zbl 1031.05101
J. Comb. Des. 11, No. 2, 100-112 (2003).

The authors consider a special case of the following problem. We have a given graph G that corresponds to a certain physical network and a logical graph I on the same set of vertices that represents the required connections on network G. A covering of I is a family of subgraphs of I that cover all edges of I, moreover any member of the family can be routed disjointly on G. This latter, so-called disjoint routing constraint means that if I_k is a member of the covering family then for each edge uv of I_k, there is a uv path in G such that all paths for I_k are vertex disjoint. The problem is to find a covering family of minimum size. The authors motivate this problem via survivable optical WDM networks and formulate both the directed and undirected problem. The special case considered in the paper is when the physical graph G is the cycle C_n, the logical graph I is the complete graph K_n and the covering family consists only of cycles that are possibly of restricted size. The authors calculate the minimum size of a covering for several cases.

Reviewer: Tamás Fleiner (Budapest)

MSC:

05C70	Edge subsets with special properties (factorization, matching, partitioning, covering and packing, etc.)
05C38	Paths and cycles

Cited in **4 Documents**

Keywords:

cycle cover; disjoint routing constraint

Full Text: DOI

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